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# Office Memorandum

STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES		
MTL	ACT	ACC
WN	V	12/21
HK	V	12/20/88
J.H.	V	12/21
CH		1-3-89
BR	FILE	12/20
TECH	ADM	ENF

TO: Files

DATE: December 16, 1988

FROM: Bob Raisch

SUBJECT: CMB Source Sampling at American Chemet and ASARCO

NEA of Beaverton, Oregon was contracted by American Chemet and ASARCO to update the CMB fingerprints for several emission sources. The updates were conducted during the period extending from December 8, 1988 through December 15, 1988. The updates were necessary to refine the CMB receptor model in order to better identify and quantify the major sources contributing to the ambient lead violations.

Since all of the control strategies contained in the original lead SIP were completed in December of 1986, 1987 serves as the base year for the revised SIP. During the testing period, plant operations and feed stock were controlled to represent 1987 conditions.

The attached chronology is a brief description of the testing. Although some problems were encountered, I believe repetitive sampling, and timely adjustments by the testers resulted in high quality samples.

BR:kh

Attachment

## 1. ASARCO - Slag Pour

Date: 12/7/88

Observers: Warren Norton and Terry Coble

Method: NEA sampler with 15 foot extension and without dilution air.

Location: On crane catwalk above pour.

Number of Runs: Two with two filters each.

Problems: The first run was lightly loaded.

## 2. American Chemet - Zinc Plant Baghouse

Date: 12/8/88

Observers: Warren Norton, Bob Raisch and Bob Jeffrey

Method: NEA sampler without dilution air or particle sizing, but utilizing Teflon filters.

Location: Inside building on stack out of baghouse.

Number of Runs: Three with two filters each.

Problems: Low stack concentrations required high flow rates on the sampler control boxes likely resulting in non-isokinetic sampling at the sampler inlet. The largest possible orifice was used on the sampler inlet but isokinetics could not be achieved. Isokinetic sampling was achieved at the stack nozzle.

## 3. American Chemet - 50" Mill Feed Baghouse

Date: 12/9/88

Observers: Bob Raisch

Method: NEA sampler without dilution air or particle sizing, but utilizing Teflon filters.

Location: Inside building on catwalk near exhaust fan in duct from baghouse.

Number of Runs: Three with two filters each.

Problems: Same as Zinc Plant Baghouse.

## 4. American Chemet - 42" Mill Feed Baghouse

Date: 12/9/88

Observers: Bob Raisch

Method: NEA sampler without dilution air or particle sizing, but utilizing Teflon filters.

Location: Catwalk near SE corner of building in square stack exhausting from baghouse.

Number of Runs: Three with two filters each.

Problems: Same as Zinc Plant Baghouse and the sampler was not cleaned between this test and the 50" Mill test. Eric Palmer okayed using the sampler without cleaning because the process material is identical at both mills. I did not oppose this action although some filter contamination may have occurred.

## 5. American Chemet - Pyrometallurgical Stack

Date: 12/12/88

Observers: Bob Raisch and Dean Arthun

Method: NEA sampler with dilution air and Teflon filters, but without particle sizing.

Location: In stack on top of pyromet building.

Number of Runs: Four with two filters each. Runs #1, #2 and #3 were on chops with average lead content (.06%), while run #4 was on high lead material (.24%).

Problems: Stack velocity was changing drastically during the tests due to intermittent burner operation (normal), variations in stack temperature (50-250°C), and gusty winds. Changes in stack velocity made it difficult to maintain isokinetics although near isokinetics were maintained at both the stack nozzle and the sampler inlets. During the first run the sampling apparatus was not started until three minutes into the batch due to a faulty variac.

## 6. American Chemet - Rotohearth

Date: 12/13/88

Observers: Bob Raisch and Dean Arthun

Method: NEA sampler with dilution air and Teflon filters, but without particle sizing.

Location: On scaffolding inside the building in the stack from the scrubber.

Number of Runs: Three with two filters each.

Problems: Near the end of the first run, one of the sampler control boxes indicated a drastic drop in air flow (rotometer). The problem was later (after the final run) diagnosed as a plugged drierite cartridge. The lower flow rates on the one sampler probably resulted in non-isokinetic sampling on the associated inlet and filter. The three filters from that sampler will need to be reviewed and a decision made whether to include the data in the fingerprint. However, the filters from the other leg should be of high quality.

Comments: The supersaturated plume was diluted sufficiently to avoid water carry-through to the filters.

## 7. ASARCO - New Deal Building

Date: 12/14/88 (during shutdown except for concentrate receiving) and 12/15/88 (operating)

Observers: Bob Raisch (12/14/88 only) and Terry Coble

Method: High-volume sampler with PVC filters.

Location: On deck, level with and west of the feed hoppers; inside building.

Number of Runs: Three on each day.

Problems: Unexpected high loadings during shutdown; may have overloaded filters. Exposure time was reduced during operation on 12/15/88.

## 8. ASARCO - Sinter Building

Date: 12/14/88 (during shutdown) and 12/15/88 (operating)

Observers: Bob Raisch (12/14/88 only) and Terry Coble

Method: High-volume sampler with PVC filters.

Location: On catwalk above belt feeders to sinter machine; inside building.

Number of Runs: Three on each day.

Problems: Unexpected high loadings during shutdown resulted in one void sample. Exposure times were reduced during operation on 12/15/88.

## 9. ASARCO - Speiss Pit

Date: 12/15/88

Observers: Bob Raisch and Terry Coble

Method: NEA sampler with dilution air and Teflon filters, but no particle sizing.

Location: In the reverberatory building from port in top of speiss pit.

Number of Runs: Two runs with two filters each.

Problems: Low concentrations and light loadings on the first run required the second run to extend over the remainder of the speiss tap. Since tapping only occurs once per day, additional samples were not gathered.

## 10. ASARCO - Matte Crushing

To be completed in late December when the crusher is in operation.